[54] OPTICAL DATA PROCESSING DEVICE

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[57] ABSTRACT

An optical data processing device has successive light intensity modulating levels, each level including a matrix of cells (35), each cell having therein an element (31) of electrically controllable light transmissivity and a control device (32) which is responsive to signals supplied thereto to control the transmissivity of the element (31) in accordance with such signals. The matrix cells in at least one level also each include a light responsive element (34), such as a photodiode, for controlling the pattern of transmissivities at that level in accordance with the light received from the preceding level, thereby permitting optical as well as electrical modulation of the input image, formed at the first level. The final level (n) includes a display screen which, when an input light beam is incident on the first level, produces an output image corresponding to the input image as modified by the sequence of levels in accordance with the supplied data signals. Since there may typically be 350,000 matrix cells in each level, very high parallel data processing capability is achieved.

8 Claims, 3 Drawing Sheets